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Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Allen R. Geiger

Examiner: C. Delacroix-Muirheid

Serial No.: 07/926,227

Filed: August 6, 1992

For: Photochemical Process And System For
Performing A Photochemical Process

Commissioner of Patents and Trademarks
Washington, D.C. 20231

AMENDMENT

Sir:

In response to the Office Action dated May 27, 1993, please
amend the above-identified patent application as follows:

Cy 1 14. (Twice Amended) A method for performing a
photochemical reaction comprising the following steps:

P1 introducing a first molecular substance into a chamber;

B1 P1 tuning the outlet of at least one [optical parametric
oscillator] ^{optical parametric oscillator/laser} ~~OPOL~~ to at least one absorption band of the first
molecular substance; and

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B1 cont. C P1 directing the at least [a] one portion of the output of the ^{optical parametric oscillator/laser} [at least one optical parametric oscillator] OPOL tuned to the [at least one] absorption band of the first molecular substance into the chamber to dissociate the first molecular substance.

B2 C 10 18. (Once Amended) A method as defined in claim ¹14, wherein the step of tuning the output of the [at least one optical parametric oscillator comprises employing at least one optical parametric oscillator/laser (OPOL) including] ^{optical parametric oscillator/laser} OPOL includes an optical pump source for generating pump radiation, and an OPOL material responsive to the pump radiation to generate laser radiation and responsive to the laser radiation to generate parametric optical radiation.

B3 C 22. (Once Amended) A method as defined in claim ²15, further comprising the steps of directing a residual first molecular substance released from the chamber into a second chamber, and directing at least a portion of the output of at least one [optical parametric oscillator] ^{optical parametric oscillator/laser} OPOL tuned to [at least one] the absorption band of the first molecular substance into the second chamber to dissociate the residual molecular substance into at least two second molecular substances.

B4 9 ~~25~~. (Twice Amended) A method as defined in claim ~~17~~⁴, wherein the wavelength of the output of the at least one optical parametric oscillator [OPOL] is within the region of approximately 3.0 microns.

13 ~~27~~. (Once Amended) A method of performing a photochemical reaction comprising the following steps:

introducing a first molecular substance into a chamber;

C tuning the output of at least one [optical parametric oscillator] ^{optical parametric oscillator / laser} ~~OPOL~~ to at least one predetermined wavelength corresponding to at least one absorption band of the first molecular substance; and

B5 altering the vibrational distribution of the at least one optical parametric oscillator into the first molecular substance and promoting molecular vibration approximately at the [at least one] predetermined wavelength to from a peak within the vibrational distribution of the first molecular substance at approximately the [at least one] predetermined wavelength and dissociate the first molecular substance.